



Public Health
ASSOCIATION OF NZ INC
KĀHUI HAUORA TŪMATANUI

Cycling in a rebuilt Christchurch: evidence and advocacy

Prof Simon Kingham

Professor of Geography and Director of the GeoHealth Laboratory

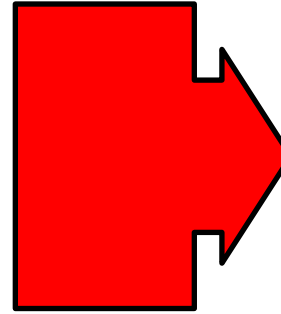
PHA Canterbury and West Coast Branch AGM

August 20th 2014



Who am I?

- University Professor
 - Teacher and Researcher
- Local Transport involvement
 - Regional Transport Committee
- Christchurch resident for 14 years
- Commuter & utility cyclist
- Husband and father



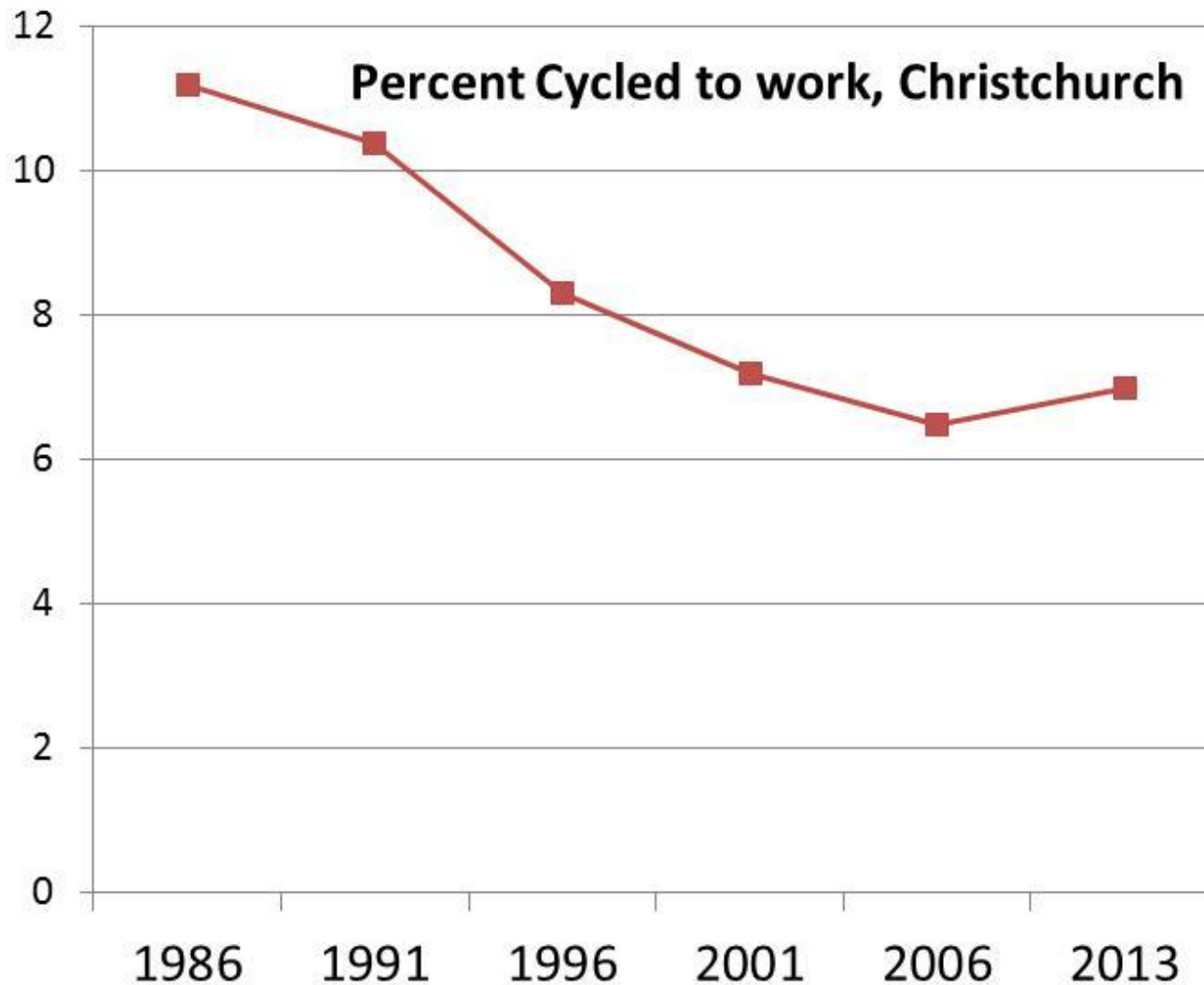
Evidence based
cycle advocate



Talk today

-
- Context
 - Why do we want more people to cycle?
 - How do we get more people to cycle?
 - How do we advocate for more investment for cycling?

Context



Context

**Strong &
fearless**



**Interested but concerned
~ 50 - 60%**

**Not able or not
interested ~33%**



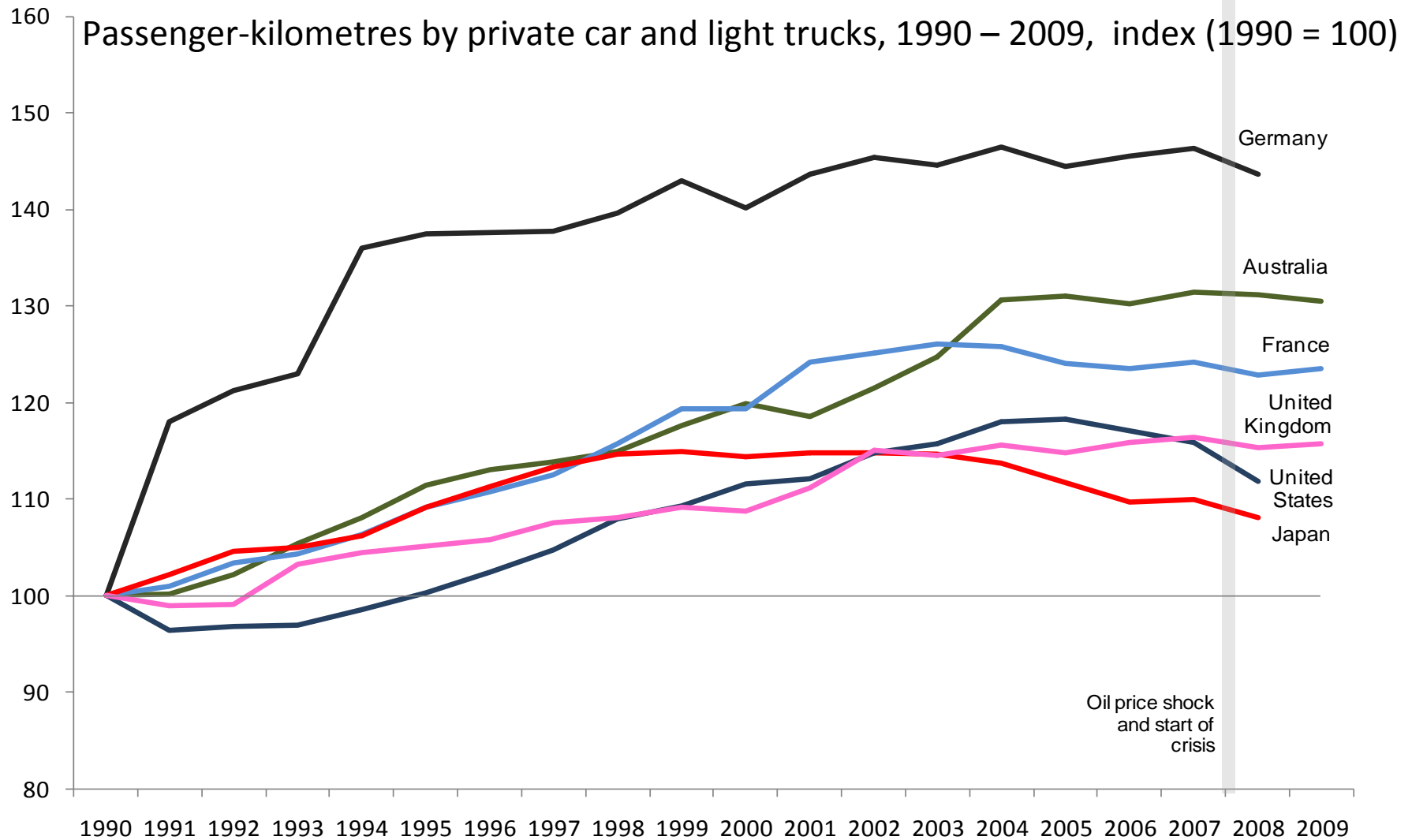
**Enthusied &
confident**

Roger Geller's 4 types of cyclist

<http://www.portlandoregon.gov/transportation/44597?a=237507>



Peak car



Peak car

... especially younger people ...

The New Zealand Herald

[National](#)[World](#)[Business](#)[Sport](#)[Technology](#)[Entertainment](#)[Life & Style](#)

Brian Rudman's Opinion

[✉ Email Brian](#)

Brian Rudman is a NZ Herald feature writer and columnist.

Brian Rudman: End of the road for the sacred car?

9:30 AM Friday Jun 6, 2014

89 comments

[Auckland Region](#)[Brian Rudman on Auckland](#)[Motoring](#)

131



18



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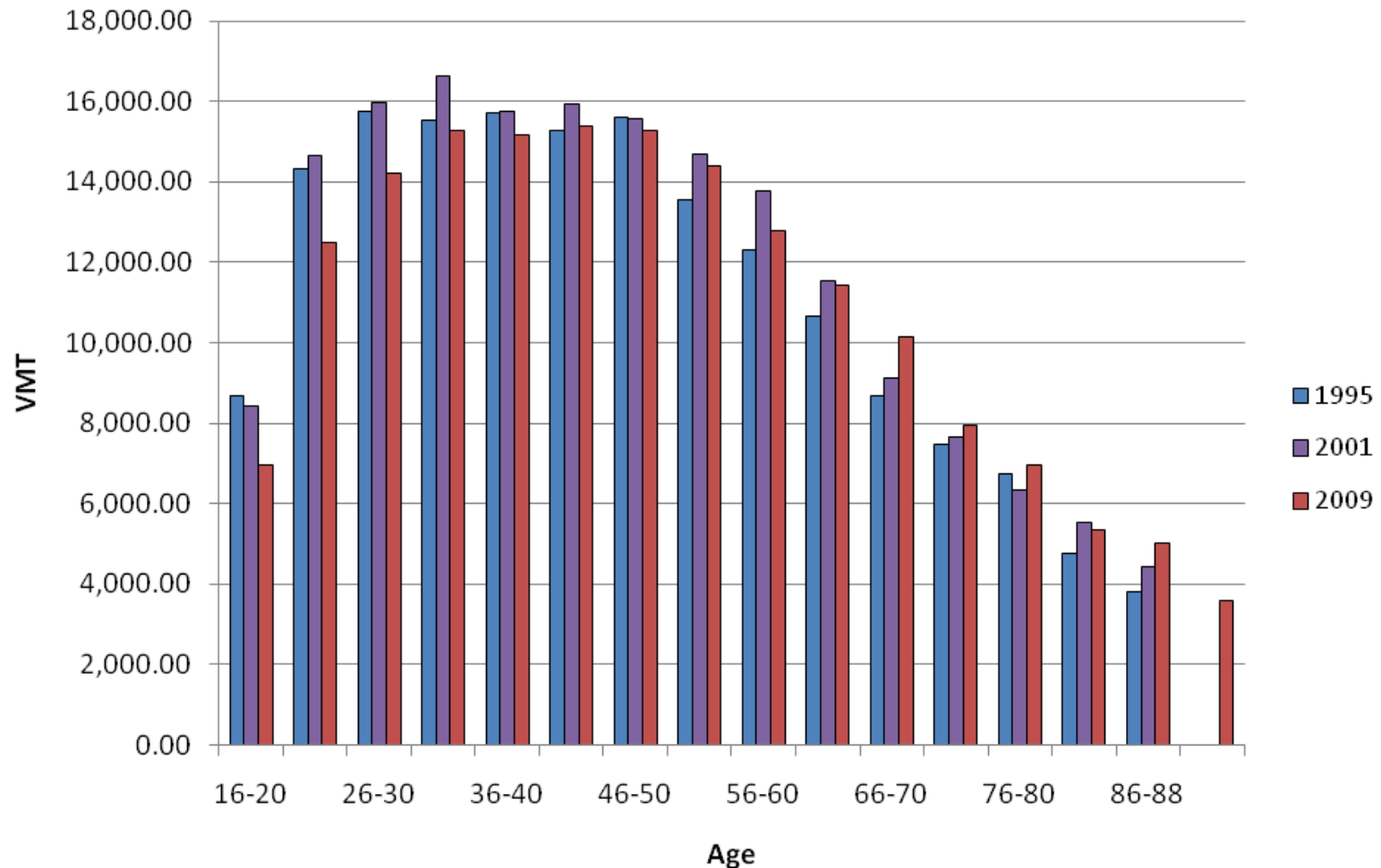


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As New Zealand's largest roading project roars ahead, people are using their vehicles less and their legs more

Peak car and age

Annual vehicle miles per driver by age, USA, 1995, 2001, 2009



**WHY DO WE WANT MORE
PEOPLE TO CYCLE?**

Climate change

- Domestic transport contributes 42 % of total carbon dioxide emissions in NZ
- 17% of ALL carbon emissions are from motor vehicles



**YOU CONTROL
CLIMATE CHANGE.**

TURN DOWN. SWITCH OFF. RECYCLE. WALK. **CHANGE**

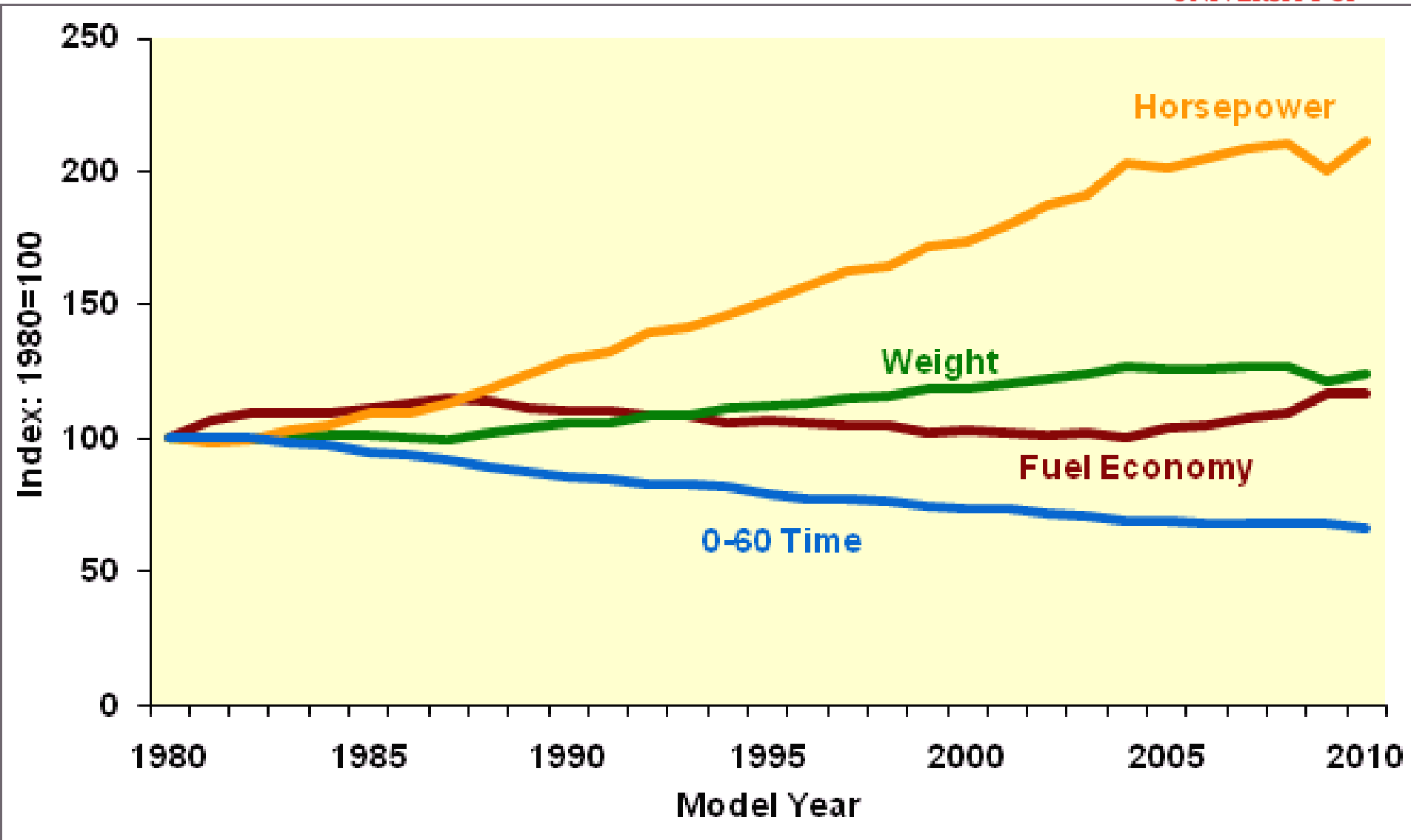
Traffic pollution

Traffic pollution:

- Kills 45 adult Cantabrians per year
- Causes 47,000 restricted activity days among Canterbury
- From PM_{10} costs \$126m per year in Christchurch (\$164m Canterbury)

Source: Kuschel et al, Updated Health and Air Pollution in New Zealand Study Volume 1: Summary Report, 2012, Prepared for HRC, MoT, MfE and NZTA.

Fuel efficiency



Characteristics of New Light Vehicles over Time

www1.eere.energy.gov/vehiclesandfuels/facts/m/2011_fotw690.html

Road space and congestion



Road building

- National \$12.3bn funding package (2012-15)
 - Roads especially new state highways (Roads of National Significance)
 - 0.43% for walking & cycling

“this means the funding available for public transport, cycling and walking networks ... will be heavily constrained for much of the early recovery period”

- Christchurch Transport Strategic Plan

- NZ research: *“transforming urban roads over the next 40 years, using best practice physical separation on main roads and bicycle-friendly speed reduction on local streets, would yield benefits 10–25 times greater than costs”* (Macmillan et al, 2014)
- A 3 yr intervention in 6 cycling demonstration towns found £2.59 benefit for every £1 invested in decreased mortality alone (Sloman et al, 2009)
- Review of sixteen economic evaluations of the health effects of transport interventions that increased walking and cycling found that mean benefit-cost ratio of 5:1 (Cavill et al, 2008)

35% decrease in injuries to all street users (8th Ave)

58% decrease in injuries to all street users (9th Ave)

Up to 49% increase in retail sales (Locally-based businesses on 9th Ave from 23rd to 31st Sts., compared to 3% borough-wide)

Left turn bays and signal phases

Mixing zones for bicycles and left-turning vehicles

Parking-protected bike lane

Pedestrian safety islands

New York City Dept of Transportation, Measuring the Street: New Metrics for 21st Century Streets

www.nyc.gov/html/dot/downloads/pdf/2012-10-measuring-the-street.pdf

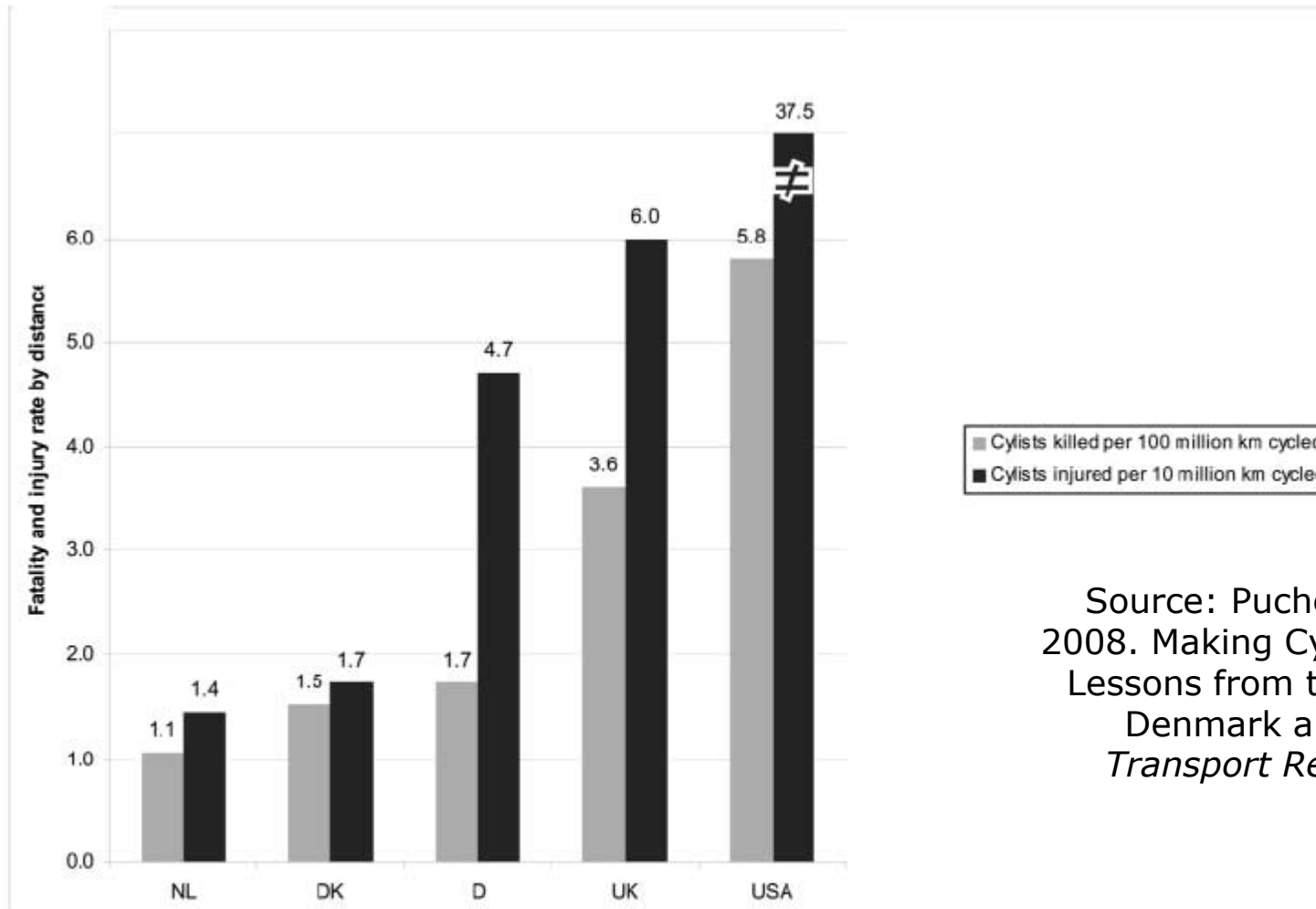
Average Customer Expenditures by Mode of Travel and Type of Establishment

Mode	Establishment	Trips per Month	\$ per Trip	\$ per Month	N
Auto	Bar	1.6	25.55	40.21	88
	Convenience	9.9	7.98	79.37	543
	Restaurant	2.2	18.74	41.16	409
	Total	4.5	13.70	61.03	1,040
Bike	Bar	4.9	14.08	68.56	42
	Convenience	14.5	7.30	105.66	63
	Restaurant	3.5	12.08	42.52	48
	Total	7.1	10.66	75.66	153
Transit	Bar	1.8	19.54	35.35	13
	Convenience	10.9	6.91	75.62	53
	Restaurant	3.5	11.52	40.68	36
	Total	5.7	10.15	58.16	102
Walk	Bar	3.1	22.17	68.42	53
	Convenience	12.6	6.13	77.34	254
	Restaurant	2.6	16.74	43.77	131
	Total	5.9	11.25	66.22	438
Total	Bar	2.5	21.78	53.59	196
	Convenience	10.9	7.36	80.40	913
	Restaurant	2.4	17.39	41.78	624
	Total	5.0	12.60	63.46	1,733

NOTE: N = number of respondents.

Clifton K, 2012, Business Cycles: Catering to the Bicycling Market, TRB 280, 26

Safety



Source: Pucher and Buehler.
2008. Making Cycling Irresistible:
Lessons from the Netherlands,
Denmark and Germany.
Transport Reviews 28 (4).

Sources: Danish Ministry of Transport (2007); Department for Transport (2007); German Federal Ministry of Transport (2007); Netherlands Ministry of Transport (2007); U.S. Department of Transportation (2007)

Figure 10. Fatality rates and non-fatal injury rates in the Netherlands, Denmark, Germany, the UK and the USA (2004–2005).

Safety

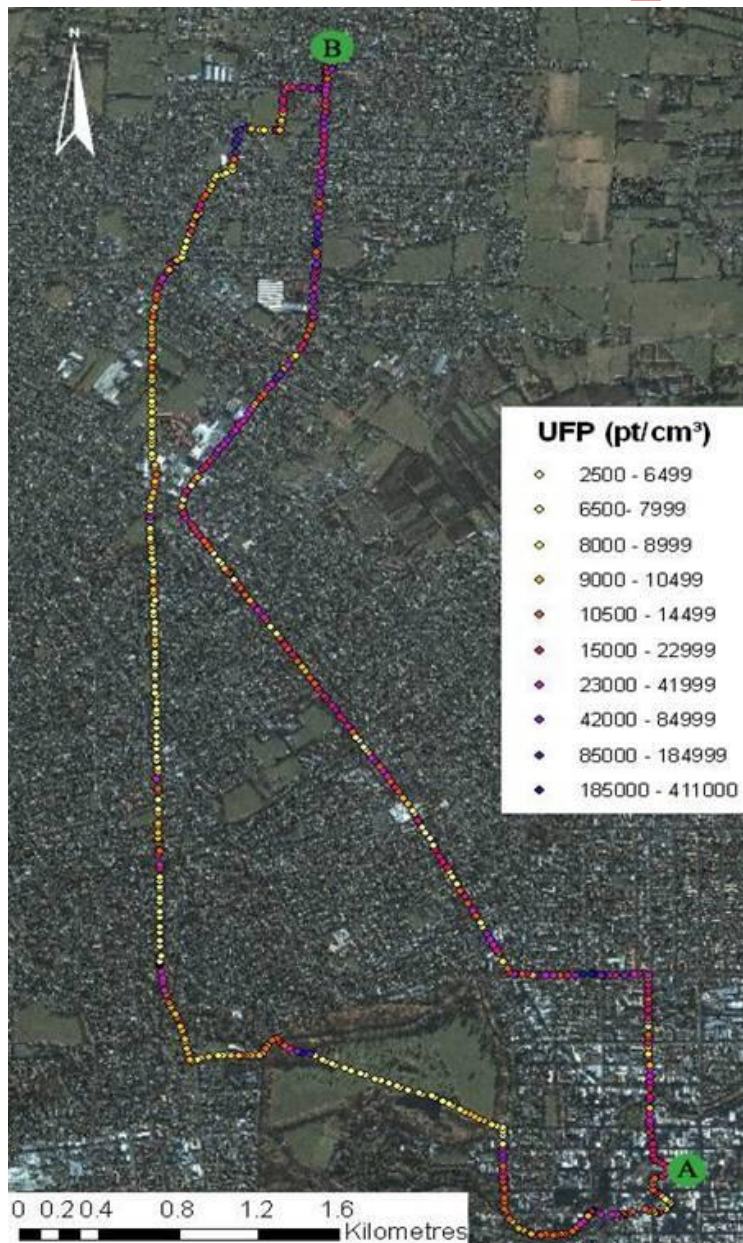


Source: Netherlands Ministry of Transport (2007)

Source: Pucher, John, and Ralph Buehler. 2008. Making Cycling Irresistible: Lessons from the Netherlands, Denmark and Germany. *Transport Reviews* 28 (4).

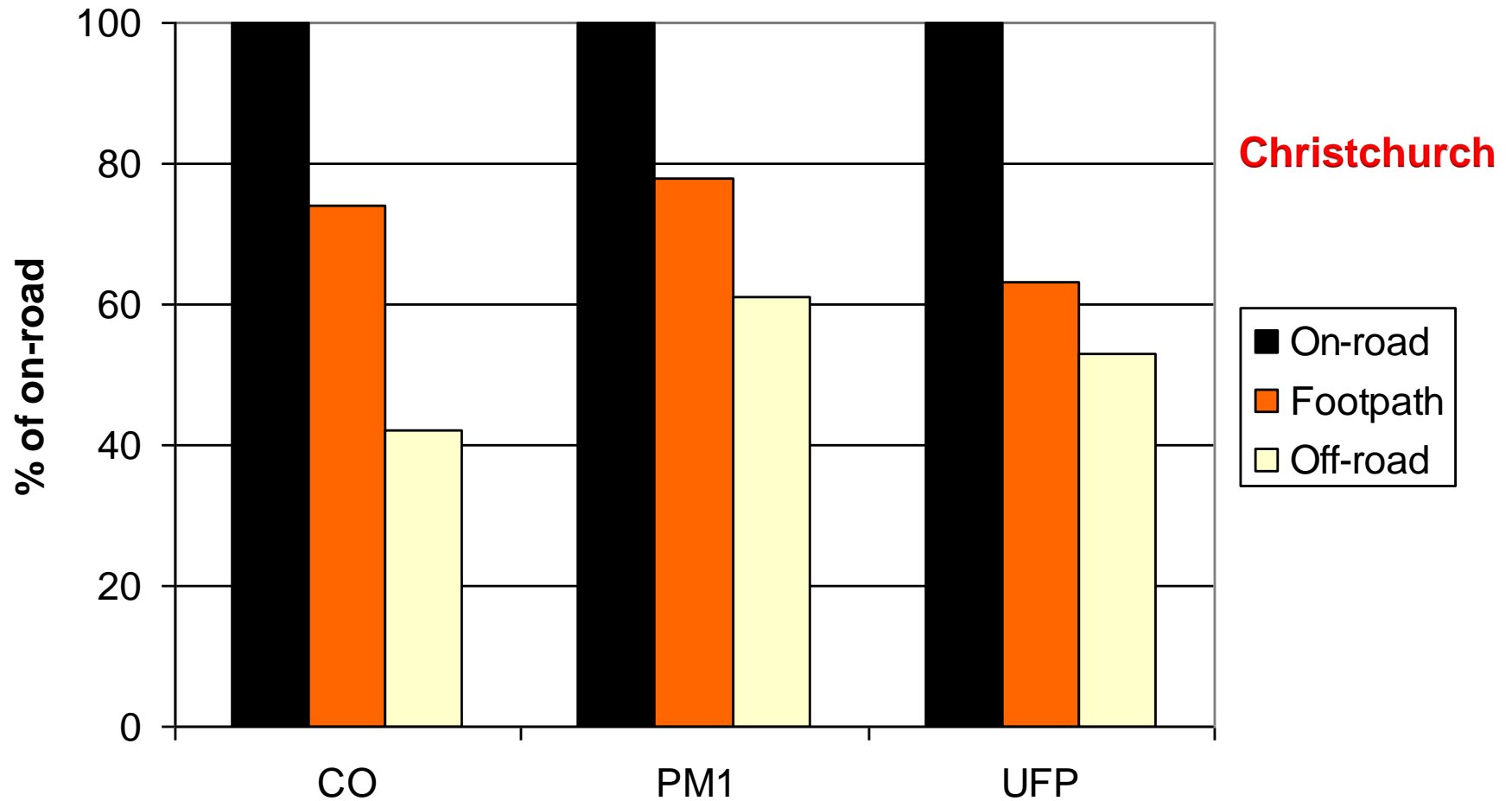
Figure 12. Inverse trends in cycling fatality rates and annual kilometres cycled per inhabitant in the Netherlands (1950–2005).

Pollution exposure



Source: Simon
Kingham and
Woodrow
Pattinson

Pollution exposure



Source: Simon Kingham

Communities that promote sustainable and active can:

- Reduce disparities between the rich and poor
- Promote good neighbourhood
- Enable poor to gain better access to healthy food
- Lead to decreased crime

Source: OECD, 2000, Environmentally sustainable transport. Futures, strategies and best practices.

Happier people



Morris EA and Guerra E, 2014, Mood and mode: does how we travel affect how we feel? Transportation DOI 10.1007/s11116-014-9521-x

"New Zealand is in the grip of a global obesity epidemic, the future costs of which will be enormous, potentially unaffordable for the health system."

- Professor Norman Sharpe, New Zealand Heart Foundation medical director, Sept 2011 www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=10752121

Obesity epidemic reaching crisis levels

By Patrice Dougan

7:09 PM Thursday May 29, 2014

[Health](#) [Health & Wellbeing](#) [Obesity](#)

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The latest global fat stats are pretty grim, experts say. Photo / Thinkstock

New Zealand's obesity epidemic has reached crisis levels, health and nutrition experts says.

An international study has shown Kiwis have a higher rate of obesity than Australians, with two thirds of adults classed as obese or overweight.

This figure has risen over the past 30 years from 50 per cent, the biggest increase among developed nations in the study.

Childhood obesity rates also increased, rising to 29 per cent from 18 per cent in the same period.

“Higher taxes on vehicle fuel could also go to expand walkways and cycleways – with a study from Oregon suggesting that cycle infrastructure is very costs effective

Not only does increased active transport help prevent and control obesity – it may also be good for mental health, reducing air pollution, and reducing high green house gas”

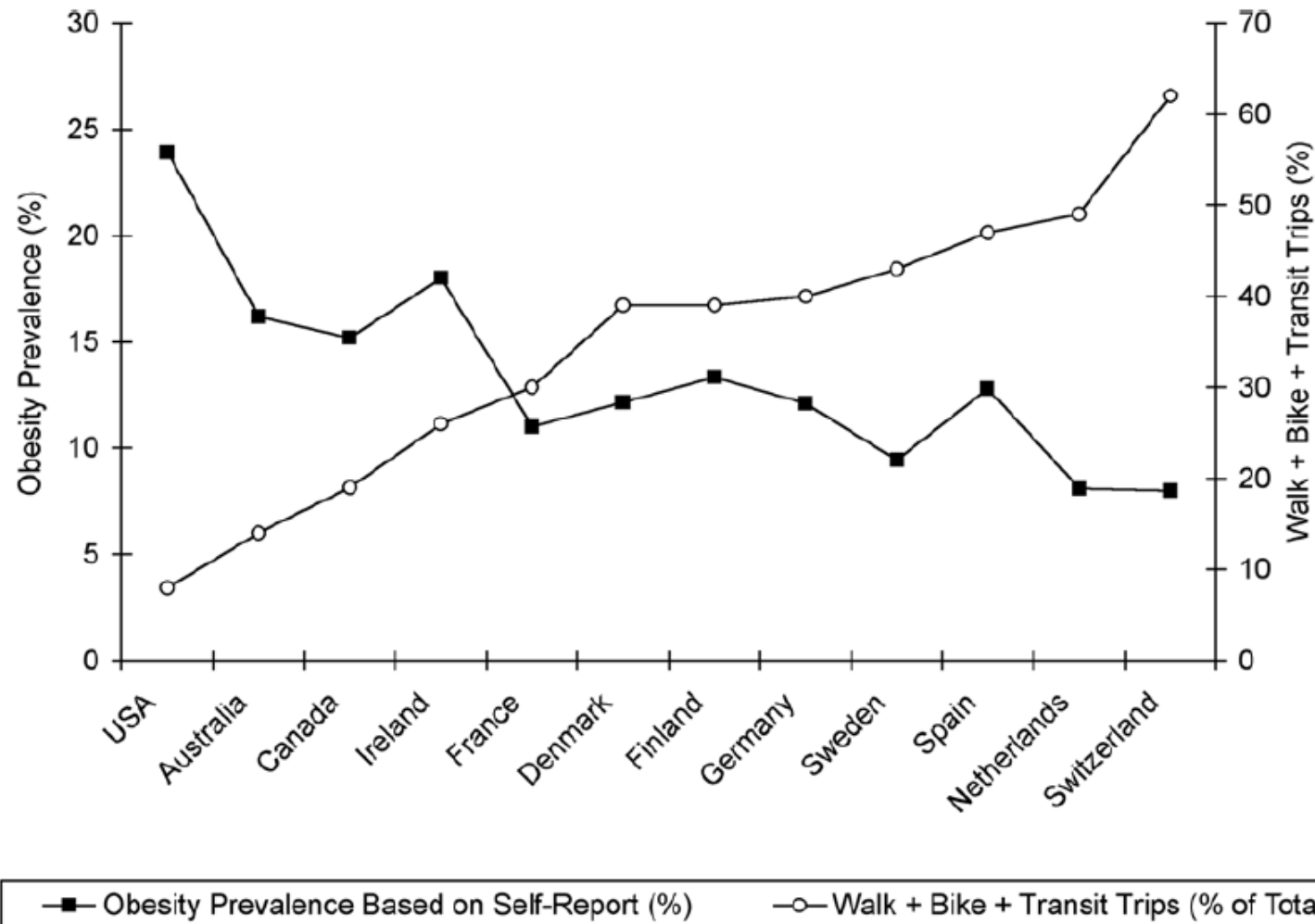
- Assoc Prof Nick Wilson, Otago Uni

NZ Medical Association report

NZ Medical Association report (June 2014) recommends:

- Doctors should give obese healthy living advice and tell them to exercise
- Expand nutrition and exercise programmes
- Stop unhealthy food marketing aimed at children
- Tax sugary beverages
- Bring in a consistent and easy-to-use food labelling system
- Food and nutrition guidelines for school canteens and hospitals
- Nutrition part of school curriculum
- Licensing of fast food premises
- Make urban environments support physical activity
- Possibly expand health target for pregnant women to all

What level of impact



Source: Bassett et al, 2008, Walking, Cycling, and Obesity Rates in Europe, North America, and Australia. *Journal of Physical Activity & Health* 5 (6):795-814.

What level of impact

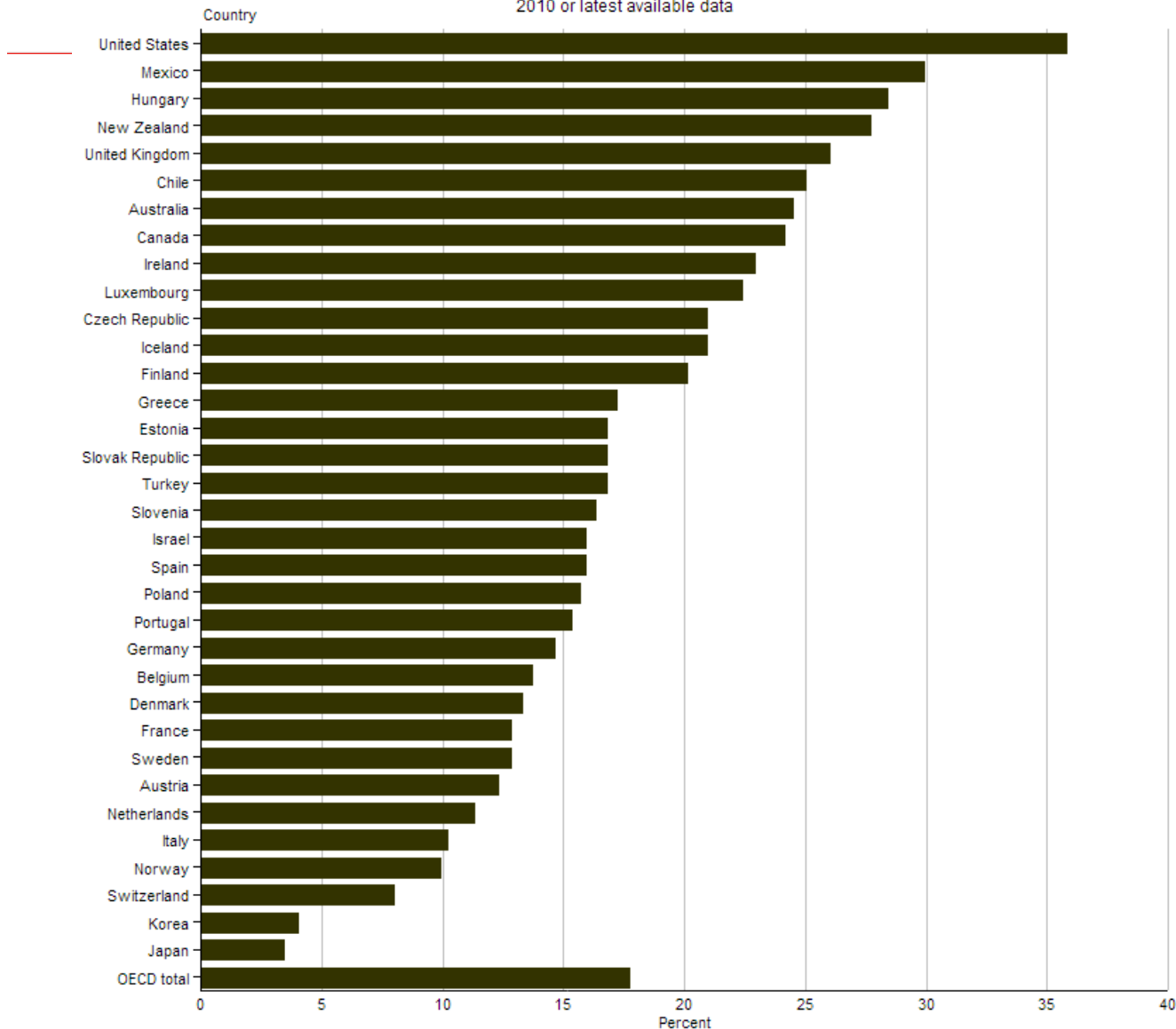
- Obesity costs NZ \$622m per year* in health costs alone (+ \$98-\$222m lost productivity)#
- That equates to \$64m in Christchurch for health costs (+ \$10-\$23m in lost productivity)

* *Based on 2006 figures*

Lal et al, 2012, Health care and lost productivity costs of overweight and obesity in New Zealand. Aust NZ J Public Health. 2012; 36:550-6

What level of impact

Obesity rates – OECD
By country
2010 or latest available data



What level of impact

If Christchurch's obesity rates dropped from 33% to:

- 11.4% (Netherlands); we'd save over \$50m p.a.
- 20% - we'd save over \$30m p.a.
- 25% - we'd save over \$20m p.a.

**HOW DO WE GET MORE
PEOPLE TO CYCLE?**

How?

Assessment of the type of cycle infrastructure required to attract new cyclists

- Type of infrastructure needed to attract ‘**new**’ cyclists
- Investigate the barriers and motivations for cycling
 - Perceived danger is main barrier!
 - Physical separation was key

Source: Kingham S, Koorey G and Taylor K, 2011, Assessment of the type of cycle infrastructure required to attract new cyclists. NZTA Research Report 449.

How?

If you build it, they will come: New study shows that bike lanes increase ridership



[Lloyd Alter \(@lloydalter\)](#)
[Transportation / Bikes](#)
June 3, 2014

Share on Facebook

Austin, TX: Barton Springs Road

One-way protected bike lane on the south side of the road



Bluebonnet Lane

Two-way protected bike lane on a two-way street



Rio Grande Street

Two-way protected bike lane on one-way street



Monsere et al, 2014 Lessons from the Green Lanes: Evaluating Protected Bike Lanes in the US. NITC Final report NITC-RR-583, June 2014.

Other barriers



**HOW DO WE ADVOCATE
FOR MORE INVESTMENT
FOR CYCLING?**

- Economise evidence
 - But, ... fragmented government ...Local Council spends money, MoH/CDHB reaps the benefit
- Speak up
 - People listen to health professionals!
- Be persistent and consistent
- Cycle chic
 - Make cycling cool!



Bikelash!

The bike revolution and its backlash

From bike lanes to Citi Bike and beyond, how the two-wheeled insurgency resembles other social uprisings

BY LIONEL BEEHNER / NEW YORK DAILY NEWS / Friday, May 10, 2013, 4:15 AM

A A A



DEBBIE EGAN-CHIN/NEW YORK DAILY NEWS

Transportation Commissioner Janette Sadik-Khan and Deputy Mayor Howard Wolfson kick off New York City's bike share program.

The bike wars are still at fever pitch, with mayoral candidates tripping over themselves in the rush to reverse some of Mayor Bloomberg's pro-cyclist policies.

Expansion of Bike Lanes in City Brings Backlash



Michael Appleton for The New York Times

Taking the bicycle lane on Ninth Avenue. New York has added 250 miles of bicycle-only lanes in the past four years, but not everyone is pleased.

By J. DAVID GOODMAN

Published: November 22, 2010

Over the last four years, the streets of New York City have undergone a transformation: More than 250 miles of traffic lanes dedicated for bicycles have been created, and several laws intended to promote cycling have been passed.

Multimedia



Interactive Feature

The efforts by the [Bloomberg administration](#) have placed the city at the forefront of a national trend to make bicycling viable and safe even in the most urban of settings. Yet over the last year, a backlash has taken hold.

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CALVARY
AUGUST 1
WATCH TRAILER

Calls for calm as bike lane backlash gains momentum

TIM WILLIAMS
CITY EDITOR

THE parents of tragically killed national cyclist Amy Gillett are pleading with Adelaide City Council not to buckle to a growing campaign against separated bike lanes.

Councillor Mark Hamilton will push for the Frome St bikeway to be ripped up in the wake of a backlash from motorists and traders over the loss of traffic lanes and parking spaces.

A backflip on the project would be a major embarrassment for the council, which is a partner in the Velo-city international cycling conference at the Convention Centre next month.

Mary Safe, whose daughter Amy Gillett was hit by an out-



second time the council has ripped up a separated bike lane

Sea search for swimmer

POLICE will resume an underwater search for a man who went missing while swimming at Encounter Bay yesterday.

The man was spotted near The Bluff just before 3.30pm. He was reportedly being pushed by waves against rocks.

Police say a bystander tried to rescue the man, who had an

+ 14 NEWS

SATURDAY MAY 3 2014 ADVERTISER.COM.AU

Congestion sparks push to reinstate bike lane for cars

Cyclist licensing seen as bad move

TIM WILLIAMS

TRAFFIC lanes cut for the Frome St bikeway will be reinstated at peak times if Adelaide City councillor Anne Moran has her way.

Two traffic lanes have been reduced to one in each direction to allow for kerbside bike lanes. They are separated from traffic by wide concrete blocks and planter beds that motorists will be able to park between.

Cr Moran said the blocks and planter beds should be removed to create peak hour clearway lanes for cars, where parking would be allowed the rest of the day.

The kerbside bike lane would remain separated from cars at all times by a thin concrete strip.

WHAT WOULD YOU DO TO END THE WAR BETWEEN CARS AND BIKES?

Share your ideas with us. Go to facebook.com/theadvertiser

the project is causing major delays, while traders have objected to a loss of parking spaces because of the concrete blocks.

Bike SA chief executive Christian Haag said Cr Moran's idea "feasibly could function" but would mean scrapping the new trees and landscaping that were an im-



TIM WILLIAMS
CITY EDITOR

A LICENSING and registration regime for cyclists would be a major deterrent to riding and could cost thousands of jobs if introduced around the country, Bike SA has warned.

NSW Road Minister Duncan Gay yesterday said he was giving serious consideration to making cyclists get licences as a safety measure to combat rising numbers of rider deaths.

The SA Government immediately ruled out the idea.

Bike SA chief executive Christian Haag said the hassles of licensing and registration would deter most casual riders and threaten the 10,000 jobs in the national cycling industry.

"It would act as a major disincentive for people to ride a

Bikelash!

Road cyclist conflict likened to apartheid

KURTIS EICHLER
CITY NORTH MESSENGER

LORD Mayor Stephen Yarwood has compared tensions between Adelaide's cyclists and motorists to the South African apartheid.

The comment was branded offensive by the chairman of the African Communities Council of South Australia.

Mr Yarwood's Lord Mayor-al rival in the upcoming council election has also slammed the comment, made on a podcast, branding it "stupid" and "most unfortunate".

"I could have sworn apartheid went out in the 20th century," Mr Yarwood told podcast show *Another Boring Night in Adelaide*.

"But apparently cyclists are evil and must be rid from the surface of the Earth," Mr Yar-

wood told the show. When contacted by *The Advertiser*, Mr Yarwood said he was not joking or being offensive.

"It wasn't a joke," he said. "I was saying that I was pleased apartheid no longer existed and that providing services for all groups is important."

"It was a blunt statement that apartheid was wrong and that calling for no safe infrastructure for cyclists seems to be a very unfair approach to providing equality and justice."

"If I have offended anyone in the community I am genuinely sorry."

Simmering tensions between cyclists and motorists boiled over this month ahead of the opening of the controversial Frome St bikeway.

Motorists and prominent business leaders have slammed

the separated bike lane, while Adelaide City councillor Mark Hamilton labelled it cycling policy "gone berserk".

Cr Mark Hamilton – who is running against Mr Yarwood at the November council elections – said the apartheid comment was "most unfortunate."

"If one is going to make historical references, the Lord Mayor sounds like a crusader from the middle ages," he said. "No one is against cyclists at all."

The chairman of the African Communities Council of South Australia, Mabok Deng Marial Mabok, said the comment was offensive.

Cr Anne Moran said Mr Yarwood's comments could aggravate tensions between cyclists and motorists.

"The apartheid was a terrible crime against humanity

and this is a little Moran said.

Cr Hamilton said he will push way to be scrapped SA says that work ment in cycling or more".

Bike SA want separated bike lane CBD.

FRIDAY: BIKE SA
MAGAZINE

Our report story: I was by a car cycling to advertiser.com

Adelaide City councillor Mark Hamilton will push for the Frome St bike lane to be scrapped

TIM WILLIAMS CITY EDITOR THE ADVERTISER APRIL 25, 2014 7:48PM

SHARE



168 COMMENTS



SAVE THIS STORY

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Flying in to Adelaide? Now You Can Rent ACE Cars in Aussie Great Rates Right at the Airport! acerentalcars.com.au/adelaide



So how many people might actually cycle?

- Christchurch commuting 2013 – 7% mode share
- What can we achieve?
- What are the barriers to us reaching Dutch levels – i.e. 30-40% mode share?

Christchurch - Copenhagen of the South?

For

- Plenty of road space
- Flat terrain
- Mild climate
- Many short journeys
- People like cycling
- Some existing infrastructure
- \$70m investment

Against

- Dangerous!
- Low population density?
- Our love of cars!
- Limited investment
- Political leadership
- No central govt interest

Final Conclusions

- Investing in cycling is good economically
 - Especially health benefits
- Safety is the main barrier
 - Separation from traffic is the key
- If we provide safe cycling we will see a boom in cycling rates with multiple benefits
- Leadership and political will is needed
 - Local and national

Questions?